

REMARKS

In the Office Action, the Examiner rejected claims 1-6, 8, 47-55, 57-62, 64-87, and 91-94. Applicants canceled claims 7, 9-46, 56, 63, and 88-90 in previous communications. By the present Response, Applicants amend claims 1, 47, 57, and 79 to further clarify the claimed subject matter and cancel claims 48-50. Applicants also add new claims 95 and 96. Upon entry of the amendments, claims 1-6, 8, 47, 51-55, 57-62, 64-87, and 91-96 will be pending in the present patent application. Applicants respectfully request reconsideration of the above-referenced application in view of the foregoing amendments and the following remarks.

Double Patenting Rejection

In the Office Action, the Examiner rejected claims 1-6, 8, 47-55, 57-62, 64-87, and 91-94 under the judicially created doctrine of obviousness-type double patenting in view of claims 1-42 of U.S. Patent No. 6,727,483. Although Applicants do not necessarily agree with the Examiner's assertion, Applicants are amenable to filing a terminal disclaimer upon allowance of the claims in the present application. Any decision on such a filing will, of course, be informed by any restrictions or election requirements made by the Examiner during the course of prosecution. Accordingly, Applicants respectfully request that the Examiner hold in abeyance the double-patenting rejection until the present claims are determined to be allowable.

Rejections Under 35 U.S.C. § 103

In the Office Action, the Examiner rejected claims 47-55 and 68-78 under 35 U.S.C. § 103(a) as unpatentable over Henderson et al. (U.S. Patent No. 3,403,240) in view of Duncan (U.S. Patent No. 5,198,053) and Antier et al. (U.S. Patent No. 4,058,696). The Examiner also rejected claims 1-6, 8, 57-62, 64-67, 79-87, and 91-94 as unpatentable over Henderson et al., Duncan, and Antier et al. in view of Cydzik et al. (U.S. Patent No. 5,874,713). Applicants respectfully traverse these rejections.

Legal Precedent

The burden of establishing a *prima facie* case of obviousness falls on the Examiner. *Ex parte Wolters and Kuypers*, 214 U.S.P.Q. 735 (PTO Bd. App. 1979). Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention absent some teaching or suggestion supporting the combination. *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 732 F.2d 1572, 1577, 221 U.S.P.Q. 929, 933 (Fed. Cir. 1984). Accordingly, to establish a *prima facie* case, the Examiner must not only show that the combination includes *all* of the claimed elements, but also a convincing line of reason as to why one of ordinary skill in the art would have found the claimed invention to have been obvious in light of the teachings of the references. *Ex parte Clapp*, 227 U.S.P.Q. 972 (B.P.A.I. 1985). When prior art references require a selected combination to render obvious a subsequent invention, there must be some reason for the combination other than the hindsight gained from the invention itself, i.e., something in the prior art as a whole must suggest the desirability, and thus the obviousness, of making the combination. *Uniroyal Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 5 U.S.P.Q.2d 1434 (Fed. Cir. 1988).

Omitted Features of Independent Claims 1 and 47

Applicants respectfully note that the Henderson et al., Duncan, Antier et al., and Cydzik et al. references, even taken collectively, fail to disclose each element of independent claims 1 and 47. For instance, independent claim 1 recites “a cooling unit ... configured to cooperate with at least the fluid-cooled induction heating cable to provide a *single continuous cooling path* operable to dissipate heat from the fluid-cooled induction heating cable *and* from an electrical lead extending from the portable induction heating system to the fluid-cooled induction heating cable” (emphasis added). Similarly, independent claim 47 recites “a power source operable to apply output power to *an electrical pathway* ... [including] an induction heating cable adjacent the workpiece, a supply path from the portable heating system to the induction heating cable, and a return path from the induction heating cable to the portable heating system” and “wherein the

induction heating cable is a fluid-cooled induction heating cable that cooperates with the cooling unit to form at least a portion of *a single cooling pathway* that is configured to generally extend along the supply path and the return path of the electrical pathway to remove heat therefrom" (emphasis added). Because the cited references fail to disclose such elements, the cited references cannot support a *prima facie* case of obviousness with respect to independent claims 1 and 47.

As will be appreciated, the Henderson et al. reference is generally directed to an induction brazing apparatus. Col. 1, lines 25-30; FIG. 2. More particularly, the Henderson et al. apparatus includes cooling water conduits 12 and 14, and water-cooled electrical conduits 16 and 18, that extend from a work unit 10. Col. 2, lines 23-32. The water-cooled electrical conduits 16 and 18 extend to the handle 20, which is configured to complete a *first* cooling pathway by fluidly connecting the electrical conduits 16 and 18. *See* col. 3, lines 5-21; FIG. 5. The water conduits 12 and 14 extend from the work unit 10 to an induction heating element 22. Col. 3, lines 26-37. Notably, the reference explicitly states that "[s]eparate cooling fluid for the induction heating element 22 is supplied from conduits 12 and 14" *Id.* It is, thus, evident that the water conduits 12 and 14 form a portion of a *second* cooling pathway that includes the induction heating element 22.

From these passages, it is clear that the first cooling pathway of conduits 16 and 18 removes heat from the electrical leads to the handle 20, while it is the second cooling pathway that removes heat from the induction heating element 22 itself. This is in direct opposition to the recitations of independent claims 1 and 47, which generally recite a single cooling path that includes a fluid-cooled induction heating cable and that operates to dissipate heat from an electrical lead extending between the induction heating cable and a portable induction heating system. For this reason, the Henderson et al. reference cannot be logically considered to disclose the single cooling path recited by the instant claims. Further, the Duncan, Antier et al., and Cydzik et al. references fail to obviate this deficiency. Consequently, these cited references, taken alone or in hypothetical

combination, fail to teach or suggest each element of independent claims 1 and 47, and do not establish a *prima facie* case of obviousness of claims 1, 47, and their respective dependent claims.

Omited Features of Independent Claims 57 and 79

Likewise, Applicants respectfully note that the Henderson et al., Duncan, Antier et al., and Cydzik et al. references, taken alone or in combination, fail to disclose each element of independent claims 57 and 79. For instance, independent claim 57 recites “a flow switch … configured to detect the cooling fluid returning from the fluid-cooled induction heating cable and to effect a change in the output power when the amount of the cooling fluid returning from the fluid-cooled induction heating cable is below a threshold amount.” Independent claim 79 similarly recites “a flow switch … configured to detect the cooling fluid received from the fluid-cooled induction heating cable and to effect a change in the output power when the amount of the cooling fluid received from the fluid-cooled induction heating cable is below a threshold amount.” Because the cited references fail to disclose such elements, the cited references fail to establish a *prima facie* case of obviousness with respect to independent claims 57 and 79.

As a courtesy, Applicants note that the recited flow switch is discussed in the present application at page 23, lines 4-12, and is illustrated in FIG. 14 as element 282. Applicants believe that the prior art of record fails to disclose the flow switch recited by independent claims 57 and 79 and, accordingly, that these independent claims are allowable over the cited art. Consequently, Applicants respectfully request consideration of these amended claims and withdrawal of the present rejection with respect to these claims.

Deficiencies of the Rejection of Independent Claims 68 and 87

Additionally, Applicants respectfully note that the Henderson et al., Duncan, Antier et al., and Cydzik et al. references also collectively fail to disclose each element of independent claims 68 and 87. For instance, independent claim 68 recites a “portable induction heating system, comprising *in a portable unit*: a power source ... [and] a temperature controller operable to control the induction heating of the workpiece in response to programming instructions provided by a user to produce a desired temperature profile in the workpiece” (emphasis added). The recitations of independent claim 87 generally include similar elements, in addition to other elements, that are part of a portable heating system “in a portable unit.” Because the cited references fail to disclose such elements, the cited references also fail to establish a *prima facie* case of obviousness with respect to independent claims 68 and 87.

In fact, the cited references do not disclose an induction heating system having, in a portable unit, a power source and a programmable power source controller, as recited in amended independent claims 68 and 87. Applicants note that the Examiner relies on the teachings of the Duncan reference as disclosing a programmable power source controller. *See* Office Action mailed November 16, 2005, page 3. As noted previously, however, the purported programmable controller of Duncan is not portable, let alone in a portable unit with the power source. The power source of the induction unit 9 of Duncan is controlled by a computer 27 that “may take the form of a PC/AT or the like.” Col. 7, lines 50-52 (emphasis added). This computer 27 employs tailored software to generate a control signal used to control the induction unit. As an intermediary between the computer 27 and the induction device 9, Duncan employs a control computer 30, which controls the power output of the induction unit 9 in response to commands from the separate computer 27. *See* col. 7, lines 56-60. However, as best illustrated in FIG. 3 of Duncan, the computer 27 (also identified by Duncan by reference numeral 29) is separate from the

induction unit 9 and, as such, the control computer 30. In summary, the computer 27 with the program is *separate* from control computer 30 local to the induction unit 9.

Recalling that the computer 27 of Duncan on which the “software” is resident is a standard PC/AT, Applicants respectfully assert that this computer 27 is not portable. Moreover, as computer 27 is separate from the induction unit, Applicants respectfully assert that the computer 29 and the induction unit 9 cannot be equated with the power source and power source controller that are “in a portable unit,” as recited in the instant claims. Indeed, nothing in Duncan suggests that computer 29 is capable of programmed control. Rather, computer 29 unintelligently reacts to control signals from the separate computer 27.

In response to these arguments, which were presented in the previously filed Response, the Examiner capriciously dismissed these arguments by merely stating “PC/AT computers do not exclude notebook/laptop computers.” Office Action mailed November 16, 2005, page 5, lines 6-7. First, Applicants note that this assertion does not adequately address the deficiencies of the Duncan reference outlined above. Secondly, Applicants note that this assertion by the Examiner is false. Because Applicants appreciate that computer form factors may fall outside the area of the Examiner’s expertise, Applicants respectfully submit that one skilled in the art would appreciate that PC/AT computers do, in fact, exclude notebook/laptop computers. The PC/AT form factor includes a power supply alone having dimensions of approximately 8-inches x 6-inches x 6-inches. Applicants respectfully note that the dimensions required for the power supply and the motherboard of the PC/AT form factor necessitate a computer having a size roughly equivalent to a standard, modern tower computer system, and that such a system could not be reasonably considered to be a notebook computer. For at least these reasons, Applicants respectfully submit that the Duncan reference fails to disclose the recited programmable controller in a portable unit.

Finally, even assuming, for the sake of argument, that the cited references could be reasonable construed as disclosing all of the recited features of the pending claims, Applicants respectfully assert that objective evidence supporting the obviousness of making the reference combination has not been presented. Applicants again respectfully assert that the mere fact that references *can* be combined does not objectively demonstrate that the references would obviously be combined by one of ordinary skill in the art to reach the given claims. With specific reference to the present case, Applicants respectfully assert that the presented motivation for combination: "it is contemplated with [the] ambit of ordinary skill artisan [*sic*] to automate a manual control device of Henderson when technology is available to improve quality," merely retrospectively identifies what is taught by Applicants. In other words, Applicants respectfully assert that the Examiner has not presented *objective evidence* that demonstrates that the cited references would be obviously combined to reach the instant claims. Instead, the Examiner has relied on Applicants' specification as a road map to combine and apply the cited references. Applicants respectfully submit that such use of impermissible hindsight construction is not appropriate.

For at least these reasons, Applicants respectfully request withdrawal of the rejections under 35 U.S.C. § 103 and allowance of claims 1-6, 8, 47, 51-55, 57-62, 64-87, and 91-94.

New Claims

New claims 95 and 96 have been added by this Response. These new claims add no new matter and are fully supported throughout the specification. Furthermore, in view of the earlier cancellation of a greater number of dependent claims, including dependent claims 48-50 presently canceled by this Response, no fees are believed due for the addition of claims 95 and 96 in this Response. These new claims are believed allowable for their dependency from an allowable independent claim, as well as by virtue of the

subject matter separately recited by these dependent claims. Accordingly, Applicants respectfully request allowance of dependent claims 95 and 96.

Conclusion

All of the claims pending in the application are thus believed to be clearly patentable over the prior art of record, and their reconsideration and allowance are requested at the Examiner's earliest convenience. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

Date: February 16, 2006

29
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